

Sandia researchers determine that common anthrax sampling methods need improvement

More deadly spores may remain after decontamination than current sampling methods show

By Chris Burroughs

Inaccurate sampling of biological pathogens can be deadly. That's what Sandia researcher Gary Brown (6245) and his team discovered after a year-long Department of Homeland Security (DHS)-funded study where they looked at sampling processes used to determine the number of viable organisms existing on surfaces following a biological attack with agents such as anthrax. "We evaluated Centers of Disease Controls (CDC) recommendations for sampling methods and discovered that all current methods underestimated the number of spores, such as *Bacillus anthracis*, the organism causing anthrax, actually present on surfaces," Gary says. "The sampling methods are much less effective than anyone realized."

Miscalculating the number of spores present following an attack could potentially be lethal. The idea for the sampling study dates back to the fall of 2001 when letters containing anthrax bacteria were mailed to several news media offices and two US senators, contaminating numerous postal facilities and killing five people. Critical questions became 1) how efficient are the various methods used to sample amounts of spores,

(Continued on page 4)



MOLLYE WILSON (6245) samples *Bacillus atrophaeus* spores, bacteria similar to anthrax but not toxic, as part of a study to determine numbers of viable organisms existing on a surface. (Photo by Randy Montoya)

Your benefits

New health plan details

Sandia medical plan for 2006

More changes . . . and an overview

This round of *Lab News* articles provided by the Benefits group outlines specific details of various new health care options available to employees. The two-page spread (pages 6-7) includes charts showing times and locations for information meetings about benefits program changes.

Sandia praised for global water issues report with CSIS

By Will Keener

Sen. Pete Domenici, R-N.M., has praised Sandia's efforts to understand problems and present solutions to issues relating to global water supply. At the same time, he urged the Labs to do more, applying creativity and innovation to an ongoing effort to understand the interdependencies of energy and water and articulate them through a report to Congress and an energy-water technology roadmap.

Domenici is chairman of the Senate Energy & Natural Resources Committee.

In a Sept. 29 news release, Domenici praised the work of Sandia and the Center for Strategic and International Studies (CSIS) in a new report on global water issues. Sandia provided scientific input for the report, while CSIS offered its international policy expertise to the effort, says Peter Davies, director of Geosciences and Environment Center 6100 and co-director of the project.

The report calls attention to a major lack of usable water supplies and suggests that interna-

New bill would create DOE energy/water program carried out by Sandia, others. Page 4.

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Managed by Lockheed Martin for the National Nuclear Security Administration

New, streamlined PMF to be launched

Employees have option of using old or new form

By Julie Hall

Sandia's Performance Management Form for nonrepresented employees is undergoing a makeover to a simpler, more streamlined version. While the form had not received final approval by the *Lab News* publication deadline, here is a first look at the expected changes. Watch for additional details in an all-employee communication as well as a future *Lab News* article.

The request for a simpler PMF came from Labs Director Tom Hunter and Deputy Director John Stichman, says Compensation Dept. 3552 Manager Chuck Maheras. They not only desired a more streamlined form but also wanted to better align the performance review process with Sandia's fiscal year while maintaining the established compensation review cycle and common merit reward date.

The new form will apply to all nonrepresented employees. Currently, Sandia uses two PMFs: one for managers and one for staff. Represented employees have their own process that will remain unchanged.

Employees will see several changes in the form: new value-of-contribution (VOC) designators; a fixed form length to focus on significant

New PMF designed to "minimize confusion and increase consistency across the Labs."

Chuck Maheras

objectives for the upcoming rating period; and reduction in the confusion created by the current Fully Contributing VOC rating and salary distribution bins of high, medium, and low.

"The new system is designed to minimize confusion and increase consistency across the Labs," says Chuck.

Labels and definitions for the new value-of-contribution designators are being finalized by executive management.

The target rollout date for the new form is Oct. 18. Use of the new form will be optional this year, according to Chuck. If managers and employees have already filled out their PMF using the old form, they can just leave it or switch to the new form at their discretion. However, since the VOC designators are being changed, all employees in this rating period will be reviewed under the new system.

While Chuck expects employees to have questions about the new form, he says it's (the form) not the most important part of the performance review process.

"The form isn't the key piece. This whole process is about honest and open communication and interaction between the employee and the manager. The form is simply the vehicle to facilitate this dialogue," Chuck says.



Remotely controlled guns guarding Y-12 high-security sites; Sandia helped on project. Story on page 5.



Truman Fellow Greg Nielson says Sandia facilities, resources bolster his MEMS research. Story on page 3.

ECP campaign to start

See page 12

What's what

You know the joke about the dog that chases cars: If he caught one, then what would he do? Well, the Cyber Security crew got a few giggles recently when a real-life analogy to the dog-and-car story happened to their colleague Sharon Walsh.

Seems the Belen Chamber of Commerce was raising money during its Rio Abajo Days festival and Sharon routinely bought a raffle ticket from a friend who works for the Chamber. Unroutinely, she got a call asking what she wanted done with her steer.

Steer? . . . What steer? she asked.

The steer you won in the Rio Abajo Days festival, she was told politely, which has to be removed from the Valencia County Fairgrounds. Soon.

Shaking away the disbelief, she made a few inquiries and found that the prize for the fund-raiser – for which she had bought a ticket – was a steer raised as a 4-H project and bought at the recently concluded Valencia County Fair by the Wells Fargo Bank and donated to the Chamber for the Rio Abajo Days festival.

Now what to do? she wondered, until someone suggested a call to Charlie Myers at the Cattlemen's Livestock Auction north of Belen. He agreed to take the steer, which he'll auction off again, and Sharon will donate the proceeds to the youth group at the church she attends, Valley Lutheran.

Now, I wonder if the next buyer of the well-traveled steer will also auction it or offer it as a prize or something similar, to benefit some additional group. I bet the steer would prefer a career like that to the obvious alternative.

* * * * *

At a recent Lab News staff meeting, the subject of story length resurfaced, offering the opportunity for the usual discussion of pros and cons.

Someone pointed out that the cheery stories offered up by the congenitally bubbly Iris Aboytes are always written succinctly and are always much-appreciated by the readership.

Keeping to character, Iris offered her rationale for brevity: "I don't know as many words as you guys!"

* * * * *

A nearly retired wag, noting this year's cancellation of the long-traditional annual summer picnic for retirees at the Coronado Club (also now retired, of course), suggested that instead, retirees could be offered complimentary enrollment in ethics, ES&H, conflict-of-interest, and other training courses required of employees.

Hmmmm. . . .

* * * * *

There's more on the changes coming to Sandia's healthcare insurance plans in this issue of Lab News. You'll find it on pages 6 and 7.

One adventurous soul who plans to retire to the Caribbean/Gulf area soon with only 15+ years at Sandia said after reading the new fee structure in the last issue that he may have to forego insurance and instead sign up with a Santeria health provider or an island ju-ju doctor.

— Howard Kercheval (844-7842, MS 0165, hckerch@sandia.gov)

How-to book on laser beam shaping applications edited by Sandians

Following up on their well-received first book, Laser Beam Shaping: Theory and Techniques, Sandians Fred Dickey (2616) and Scott Holswade (5350) have edited (with David Shealy of the University of Alabama at Birmingham) a compact new volume, Laser Beam Shaping Applications.

The attractively designed, 357-page volume offers readers the thoughts of 19 prominent practitioners who share their in-depth knowledge of how to shape laser beams to optimize their utility and improve future development.

Contributors hail from sites as diverse as Moscow, Pretoria, Rochester, and yes, Albuquerque.

In nine well-illustrated chapters, the authors — active leaders in their respective specialties — discuss how to improve illuminators for microlithography, array-type laser printing systems, and excimer laser image systems, as well as optical data storage, isotope separation, shaping via flexible mirrors, and spectral control of spatially dispersive lasers. There is also a review of the field of beam-shaping (this last by Fred and Scott).

The final chapter contains a history of beam shaping that begins thousands of years ago with Assyrians in northern Iraq who had developed "a small oval, polished rock crystal in the shape of a plano-convex lens about one-quarter-inch thick." It also discusses Archimedes, who is said to have arranged parabolic mirrors that would quickly sink wooden ships by burning holes in them. The chapter then continues with more modern light control.

Extensive references provide intellectual meat for more in-depth study.

The book, published by the Taylor & Francis Group, is 102nd in its optical science and engineering titles.

Recognizing the remarkable lack of acknowledgments to engineers in the modern world (despite the fact that their achievements are everywhere), the authors dedicate their second volume "to the many unrecognized researchers who developed key methods and applications of beam shaping. They innovated quietly to maintain legitimate corporate advantage, so their names are largely unknown."

The book was published in August and first displayed at the August 2000 SPIE Annual Meeting in San Diego.

—Neal Singer

Sandia #1, says Aviation Week

In the Sept. 5 issue of Aviation Week and Space Technology Magazine, an article titled "The Right Stuff" asserts that aerospace and defense contractors interested in attracting the smartest people need to provide "technologically challenging jobs and a robust product-development pipeline."

The Aviation Week survey ranks Sandia "highest for the second consecutive year in terms of providing technological challenges, valuing its employees, and promoting diversity in the workplace."

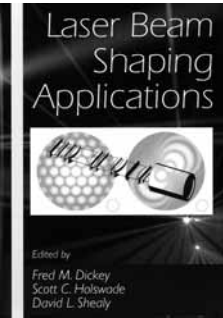
—Neal Singer

Sympathy

To Dave Borns, Manager, Dept. 6113, on the death of his father, William Borns of Philadelphia, Pa., Sept. 26, 2005.

For the record

The ground-breaking ceremony for the new National Infrastructure Simulation and Analysis Center (NISAC), originally scheduled for Oct. 12 as announced in the last Lab News, was postponed and will be rescheduled.



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Retiree deaths

Paul E. Miller (age 79) August 23
A. E. McMurray (89) August 27
Dulin G. Westfall (89) September 2
Pierce L. Brown (80) September 2
Francis R. Martin (87) September 5
H.L. Macpherson (85) September 5
Charles H. Whitmer (91) September 8
Bennie D. Padilla (91) September 19
F. Max Morris (66) September 30

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Others: To receive the Lab News or to change the address (except retirees), contact Michelle Fleming, Media Relations and Communications Dept. 3651, 505-844-4902, e-mail meflemi@sandia.gov, or Mail Stop 0165, Sandia National Laboratories, Albuquerque, NM 87185-0165.

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Web Users: The Lab News is on the Web at www.sandia.gov/LabNews.

Truman Fellow Greg Nielson: Sandia's microfab and MEMS facilities, staff are second to none



President Harry S. Truman Fellowship in National Security Science and Engineering

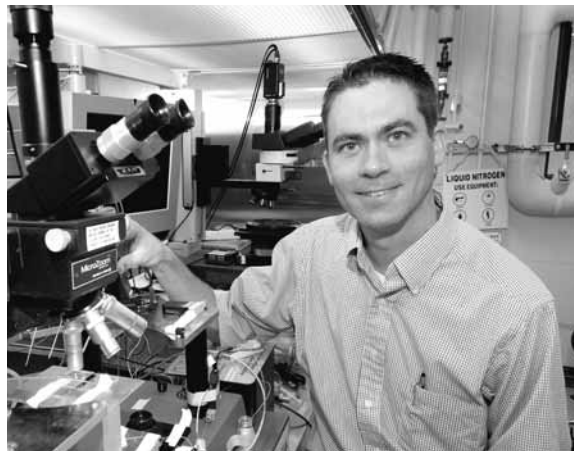
Second of a series

Note: As Sandia embarks on the third year of its prestigious President Harry S. Truman Fellowship in National Security Science and Engineering, the Lab News asked Greg Nielson, one of the Fellows selected in the first year of the program, to talk about his experiences at Sandia. Greg holds a BS from Utah State University, and MS and PhD degrees from MIT. During his Truman Fellowship, Greg (Dept. 1769) is refining novel activation switches for microelectromechanical systems (MEMS) devices. The switches can work at speeds 10 to 1,000 times faster than current approaches. Here are Greg's remarks:

The Truman Fellowship has provided me with a truly unique experience. It has given me the opportunity to think about, explore, and apply the research I initially proposed in an environment of very capable people with expertise in a wide variety of fields and with facilities and equipment that are among the best available in MEMS research in the world.

As I have pursued my work under the fellowship, there have been a number of people around the Labs and in a variety of departments who have given me valuable advice and feedback and have provided avenues for me to explore applications of my proposed work.

The MEMS designers here at Sandia have been an important resource for me as I have worked to optimize the mechanical structure and the control systems for my devices. The process



GREG NIELSON

Photo by Randy Montoya

engineers associated with the microfabrication facilities have provided significant contributions as I've worked with them to create the custom process flows required to optimize the performance of my proposed devices.

One of the most important aspects of any research for me is whether or not the research is going to have an impact. That is, will there be an application for it at the end of the day? I've had the pleasure of working with several people on finding applications for my work and have been encouraged at the success we've already had in finding important ways that the work supported by the fellowship may have an impact in a variety

of applications at Sandia.

In addition to the exceptional people who I've had the opportunity to work with, I have been very pleased at the excellent microfabrication and test facilities available here at Sandia. It would be difficult to find better microfabrication facilities for MEMS research than what is available here. By allowing me access to the facilities and people here, the fellowship has made it possible for me to achieve unprecedented levels of performance from my devices.

Finally, one aspect of my experience with the fellowship that I didn't anticipate was the opportunity to view Sandia National Laboratories from a unique vantage point. The fellowship has allowed me to meet and visit with people from all levels within Sandia and to see the workings of many departments and centers within the Labs. It has been extremely interesting to me to see how Sandia is adapting to the changing role the nation is asking the national labs to play.

Overall, the fellowship has been a really interesting and motivating experience for me. I've had many opportunities for personal and professional growth, have been able to interact with exceptional people, have been able to demonstrate MEMS performance never before attained with my research, and have been exposed to the inner workings of the Labs in ways I didn't anticipate. It has so far been a really valuable opportunity for me, and I look forward to the experiences awaiting me in the remaining two years.

For more information about the Truman Fellowship, including information on how to apply (by Dec. 5), go to: <http://www.sandia.gov/employment/special-prog/truman>.



This monthly column highlights Sandia Lab News items from 50, 40, 30, 20, and 10 years ago, but each column does not necessarily include items from each decade.

50 years ago . . . The Sandia Laboratory Federal Credit Union (SLFCU) had reached the million-dollar mark in deposits, according to the Oct. 21, 1955, *Lab News*, about six and one-half years after getting its first deposit in March 1949. Sandia laboratory technician Glenn Morehouse was credited with making the historic deposit and received a complimentary electric blender in honor of the occasion. (The CU today is beginning to approach the billion-dollar mark; as of Oct. 3, its web page showed \$923 million in assets.)

40 years ago . . . Several Sandians were getting ready to participate in the first of an eventual three nuclear tests beneath Amchitka Island in the Aleutian Island chain in western Alaska. The Oct. 8, 1965, issue said Project Long Shot would be part of an effort to chart the difference



FOR THE MILLIONTH DOLLAR deposited in the Sandia Laboratory Federal Credit Union, Glenn Morehouse, was awarded an electric blender in 1955 by David Tarbox, left, then president of the organization.



LECTURING to Peace Corps candidates, Jim Shreve (foreground) in 1965 pointed out physical characteristics that distinguish high milk-producing goats. These Peace Corps students were scheduled for service in South America where goats were raised primarily for meat.

between earthquakes and earth motions caused by nuclear explosions. The 80-kiloton shot took place Oct. 29 at 2,300 feet underground. The final two Amchitka tests took place in October 1969 and November 1971. The Oct. 8 *Lab News* also featured some unusual volunteer work Sandia Aerospace Sciences supervisor Jim Shreve was doing with the Peace Corps Training Center at the University of New Mexico. Jim had become an expert on dairy goats after he and his wife bought one while he was on a Sandia assignment in the Pacific because their three children were allergic to cows' milk. At the time of the feature story, Jim owned and kept seven goats, five horses, a burro, and four dogs. "Goats have more personality," he said.

30 years ago . . . Like today, there was much concern and discussion about energy costs and shortages, and Sandia was already conducting or gearing up many energy-related R&D projects. The Oct. 3, 1975, *Lab News* announced a new \$1.6 million study to examine several problems relating to the SYNTHOIL process, a coal liquefaction process for converting coal into "synthetic" fuel oil using heat, pressure, and chemicals.



A REFLECTIVE MOMENT for ERDA head Robert Seamans, left, and Sandia President Morgan Sparks, as they toured the Labs' solar energy facility in 1975.

Unfortunately the processes haven't yet proved economically feasible.

10 years ago . . . Many changes in Sandia's upper management ranks and overall organization from 1995 to now are evident from the then-new Sandia organization chart published in the Oct. 27, 1995, issue. Of the Labs' 16 top managers (including VPs, president/director, executive VP/deputy director), only three remain today: President and Director Tom Hunter, Deputy Director for the Nuclear Weapons Program Joan Woodward, and VP and Principal Scientist Gerry Yonas, and none had the same job in 1995. For the sufficiently curious, here are the 13 others who have retired or otherwise moved on: C. Paul Robinson, John Crawford, Paul Stanford, Bert Westwood, Bob Kestenbaum, Heinz Schmitt, Roger Hagengruber, Gary Beeler, Bob Eagan, Charles Emery, Lynn Jones, Dan Hartley, and Gary Riser. Some are still associated with Sandia through the emeritus or other programs.

— Larry Perrine

Anthrax

(Continued from page 1)

2) what minimum amounts of spores have to be present if anthrax is to be detected by these methods, and 3) how effective are the various methods for extracting material from samples for analysis.

Gary became involved in the study as part of a DHS-funded Domestic Demonstration and Application Program, led by Mark Tucker (6245), that was investigating the restoration of major transportation facilities in case of a bio attack.

“If a bio attack occurs, we need to be aware of how many anthrax spores exist initially and how many remain after a cleanup,” Gary says. “No one knows how effective these cleanup methods really are, and you don’t want to leave material around after a building cleanup in concentrations capable of causing infection.”

The question of “how clean is clean” is important for many biological and chemical agents, not just for anthrax. It has received congressional attention and is an area in need of significantly greater study, he adds.

The study’s objective was to provide a robust scientific and statistical evaluation of current swab, wipe, and vacuum surface sample collection methods. The investigation was intended to empirically determine recovery efficiency and extraction efficiency, calculate collection efficiency, and determine each method’s limit of detection.

Reference surfaces of coupons were seeded by dry deposition with a mixture containing *Bacillus atrophaeus* spores (a bacteria similar to anthrax but not toxic) and silicon dioxide particles. Forty-eight coupons, each measuring 1.25 cm x 5 cm and made from stainless steel or painted wall-board, were used as the reference surfaces.

After seeding, the surfaces were sampled using traditional collection methods — swabbing,



COMMON vacuum sampling method no longer recommended.

Surface sampling collection team

Gary Brown, Mark Tucker, Rita Betty, Raymond Boucher, Jonathan Leonard, Caroline Souza, Matthew Tezak, Kathryn Walsh, Mollye Wilson (all 6245), John Brockmann, Daniel Lucero, Todd Rudolph (all 1516), Kenneth Martinez (National Institute of Occupational Safety and Health), and Alan Lindquist (USEPA).

Concerns raised in 2003

Concerns about sample collection method efficiency were first raised in 2003 by a Government Accounting Office report (GAO 2003a, “U.S. Postal Service: Issues Associated with Anthrax Testing at the Wallingford Facility,” GAO-03-787T, May 2003) and during hearings by the House of Representatives Subcommittee on National Security, Emerging Threats, and International Relations. The subcommittee commissioned research efforts at that time to fill the data gaps and provide better interpretation tools in advance of another bio attack. At recent hearings held by the same subcommittee to assess progress of the research, the surface sample collection method evaluation work conducted at Sandia was referenced by the CDC, EPA, and DHS as a significant ongoing effort.

wiping, and vacuuming.

The sampling team found that none of the sampling methods was very efficient.

The swab system collected 40 percent of the spores, leaving 60 percent behind. The wipes collected 28 percent, leaving 72 percent on the coupons.

The biggest surprise was that the vacuum method collected only 20 percent of the spores, leaving 80 percent on the surface.

“Before this study, the vacuum method was the most highly recommended sampling method by the CDC,” Gary says. “As the result of our study CDC no longer recommends that method.”

The study also showed that each collection method has its own detection limit. Through the swabbing technique, 125 spores must be present on the surface to obtain a positive culture. Five hundred spores must exist before a positive culture is observed in both the wiping and vacuuming methods. The current EPA clean-up criterion is no positive cultures from environmental samples — meaning a site may be cleared because no samples were positive, but viable spores may still remain.

The most widely accepted estimate of inhaled spores required to produce a lethal dose in 50 percent of the population is 8,000. However, researchers at the University of Texas Medical Center using “probit” models, estimate that only 98 inhaled spores may cause lethal infection in 10 percent of the population.

Gary says the study will probably result in significant changes in the interpretation of environmental sampling data following another anthrax or similar bioagent event. It will also be useful in determining if a facility has been decontaminated following a natural disaster, such as ongoing efforts associated with Hurricanes Katrina and Rita where naturally occurring coliform bacteria and pathogenic mold, like *Aspergillus* and *Stachybotrys* species, are of concern.



MOLLYE WILSON demonstrates sample collection technique. (Photo by Randy Montoya)

“If there is a future release of anthrax, the current sampling methods would still be used, but they would be interpreted differently,” he says. “In the past if no spores were detected, it was generally considered that the surface was decontaminated. But now we realize that spores may still be present in numbers capable of causing infection, resulting in a public health response that would most likely be cautious.”

Also, if the analysis is positive, the probability of a public health threat with potentially large numbers of infection is high, and the public health response would be more aggressive.

“Either way, with current surface sampling methods, a public health threat following release of bio-threat agents cannot be ruled out,” Gary says.

Next steps: Outdoor surfaces

The Department of Homeland Security recently awarded the sample collection for the *Bacillus* spores project additional funding to continue research. The next steps will be to look at the efficiency of sampling on “dirty” outdoor surface types.

In addition, Gary Brown, who heads up the project, is meeting with emergency management officials around the country on invitation of the CDC to present study findings.

Water/energy

(Continued from page 1)

tional governments can work with private industry and the laboratories to develop new technologies to provide clean, fresh water for people globally. “I applaud [Sandia’s] work with CSIS to bring attention to the growing global water crisis,” Domenici said.

At the same time, he called for representatives of 11 DOE national laboratories and a diverse group of water experts to be “innovative” in addressing a new energy-water roadmap. Sandia, led by John Merson (6110) and Mike Hightower (6202), is spearheading this roadmapping effort. The project was funded by appropriations in FY05. Project members held their first formal meeting in Washington on Sept. 22. However, Sandia has been working on this issue with a group of national labs for several years.

“Energy and water are interdependent,” explains John. “Prudent water planning requires understanding of the interdependency of energy needs and water supplies, including competing water demands. These linkages haven’t been addressed at the level necessary for energy and water sustainability.”

New bill would create DOE energy/water program carried out by Sandia, others

Last Friday (Oct. 7) Sen. Pete Domenici announced he will introduce legislation that would create a new DOE program to promote the research, development, and commercialization of technology that focuses on the relationship between energy and water.

Sandia and Los Alamos would be among the three lead national labs that would carry out the program. Each would be required to select a university partner.

The Energy-Water Efficiency Technology Research, Development, and Transfer Program Act of 2005 would amend the Energy Policy Act of 2005 to create a new program within DOE’s Office of Energy Efficiency and Renewable Energy. Among the bill cosponsors are Sen. Jeff Bingaman, D-N.M., the Energy committee’s ranking member; Senate Majority Leader Bill Frist, R-Tenn.; and Sen. Lamar Alexander, R-Tenn.

Remotely controlled guns guarding Y-12 high-security sites

Remotely operated weapon systems modified and evaluated at Sandia, now in use at Tennessee plant

By John German

At the NNSA's Y-12 complex in Tennessee, automated gunmen are pulling guard duty at some of the site's most secure facilities. The robotic gun turrets are controlled remotely by security officers from the safety of a control room.

Sandia developed the Y-12 systems, called Remotely Operated Weapon Systems (ROWS), in partnership with Precision Remotes Inc. of California, which invented the systems.

The work was done for DOE's Office of Security and Safety Performance Assurance to create automated defense systems to help human security officers protect DOE and NNSA high-security facilities and high-risk materials from armed adversaries.

Sandia's job was to modify the systems for NNSA applications and evaluate the systems in security settings against mock adversaries, says 6422 Manager Steve Scott.

Each ROWS uses a suite of electronic linear actuators to quickly and precisely aim automatic or semi-automatic rifles at a target. It is commanded remotely by a person in a control station using cameras, scopes, and other sensors.

Unlike a human, the ROWS doesn't get fatigued, and its accuracy isn't affected by tremor, trigger anticipation, gun recoil, or shooter fatigue. Its accuracies approach and sometimes exceed those of the best human snipers.

Out of harm's way

Because ROWS is controlled remotely by someone who isn't in the line of fire, better decisions can be made about when to shoot, says Steve.

"It removes some of the stress of the situa-

"It removes some of the stress of the situation, which leads to better decisions."



RON SIMON (6632) demonstrates a prototype Remotely Operated Weapon System at Sandia.

(Photo by Randy Montoya)

tion, which leads to better decisions," he says.

Other advantages include the ability to respond to multiple threats and locations from one command center; immunity of the system to biological, radiological, chemical, and other environments; and increased firepower with reduced costs.

For safety, two people are required for opera-

tion of a ROWS system.

During evaluations at Sandia, developmental ROWS systems were installed at Sandia locations, and trained operators practiced using them against a variety of threats and scenarios.

Sandia also modeled use of ROWS systems on the Joint Conflict and Tactical Simulator (JCATS), a computer program that estimates the delay imposed on an adversary by an added security feature.

In many of the simulations, ROWS systems improved the accuracy of the operators and provided additional delay, giving human responders a better chance at stopping or repelling their adversaries, says Steve.

The Y-12 system is the first deployment of a ROWS system in the nuclear weapons complex. Sandia is assisting in the development of ROWS for DoD applications as well.

***Have a great technology?
A marketable idea?***

***TVC issues call for
business plans***

Technology Ventures Corp., a nonprofit corporation established by Lockheed Martin in 1993, is offering free services to help commercialize technologies and create jobs by helping entrepreneurs build business cases and find investors.

Attend a free workshop Oct. 18, 7:30-9:30 a.m. at Embassy Suites Hotel in Albuquerque and find

***Call for Business Plans Event
Oct. 18 • Embassy Suites Hotel
7:30 - 9:30 a.m.***

www.techventures.org

RSVP: 505-246-2882

out what TVC can do to help you create, start, or grow your technology company. TVC is seeking entrepreneurs interested in presenting their business plan to investors at the 13th annual New Mexico Equity Capital Symposium next May.

Sandia and NNSA/SSO officials sign Labs' Performance Evaluation Plan for '06



OFFICIALS from Sandia and the DOE/NNSA Sandia Site Office (SSO) sign the Labs' FY06 Performance Evaluation Plan (PEP). The PEP, signed Sept. 29, documents the negotiated performance criteria by which DOE/NNSA will appraise Sandia's performance in fiscal year 2006. Seated, from left, are Steve Goodrum (Deputy Manager, SSO), Patty Wagner (Manager, SSO), and Sandia President and Labs Director Tom Hunter. Standing are, left, Sandia VP 10000 Frank Figueroa and Sandia Deputy Director John Stichman. Meanwhile, Sandia has submitted to the SSO its self-assessment of the Labs' FY2005 performance. Tom thanked all Sandians for their hard work and commitment for making FY05 a tremendous year that yielded many tangible, noteworthy results.

(Photo by Randy Montoya)

Medical plan for 2006: More changes . . . and an overview

Editor's note: This is the next round of material on Sandia's upcoming medical plan changes for 2006 provided by Health, Benefits, and Employee Services Center 3300. It should be read in conjunction with the new premium structure information presented in the Sept. 30 Lab News.

What's New for 2006?

As outlined in the Sept. 30 Lab News, some upcoming medical plan changes are occurring in 2006. You will receive complete details in your Open Enrollment information, which the Benefits Department encourages you to read thoroughly. In the meantime, this article provides you with key additional details and a high-level overview of the changes:

For employees

➤ **The UnitedHealthcare (UHC) Premier and CIGNA Premier Preferred Provider Organization (PPO) Plans will**

- Allow referral-free access to a nationwide network of providers as well as provide an out-of-network benefit (in New Mexico, the network consists of the Presbyterian health system for UHC and the Lovelace Sandia Health Systems for CIGNA)
- Still have no in-network deductibles but will require higher out-of-network deductibles (e.g., \$500 for an individual and \$1,500 for a family)
- Provide certain preventive care in-network at 100%
- Require co-insurance (15% in-network and 30% or 50% out-of-network) for most services. (Co-insurance is an insurance policy provision under which the insurer and the insured share costs incurred after the deductible is met, according to a specific formula.)
- Provide access to primary care physicians for a \$15 copay and specialists for a \$25 copay (certain services provided in the physician office will fall to the coinsurance)
- Require higher minimum and/or maximum retail network prescription drug and mail order copays

These plans will have an in-network out-of-pocket maximum for medical expenses of \$1,500 for an individual and \$3,000 for a family in-network. Therefore, once you meet the applicable out-of-pocket maximum, the Plan(s) will pick up 100 percent of charges in-network. Note: Prescription drugs are not included in this.

➤ **The UHC Standard PPO Plan will**

- Allow referral-free access to a nationwide network of providers as well as provide an out-of-network benefit (in New Mexico, the network consists of the Presbyterian health system)
- Have higher in- and out-of-network deductibles (\$1,000 for an individual and \$3,000 for a family in-network)
- Provide certain preventive care in-network at 100%, before the deductible
- Require co-insurance (20% in-network and 30% or 50% out-of-network) for most services
- Provide access to primary care physicians for a \$15 copay and specialists for a \$25 copay (certain services provided in the physician office will fall to the coinsurance)
- Require higher minimum and/or maximum retail network prescription drug and mail order copays

This plan will have an in-network out-of-pocket maximum for medical expenses of \$2,500 for an individual and \$5,000 for a family in-network. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges in-network. Note: Prescription drugs are not included in this.

➤ **The CIGNA In-Network Plan will**

- Allow referral-free access to a nationwide network of providers (in New Mexico, the network consists of the Lovelace Sandia Health Systems)
- Provide certain preventive care in-network at 100%
- Require higher copayments for certain services
- Provide access to primary care physicians for a \$15 copay and specialists for a \$25 copay
- Require higher retail pharmacy prescription drug and mail order copays
- Note: Infertility benefits are not covered under this Plan.

This plan will have an out-of-pocket maximum for medical and prescription drug expenses of \$1,500 for an individual and \$3,000 for a family. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges.

➤ **The Kaiser HMO Plan in California will**

- Require higher copayments for office visits and certain services
- Provide some preventive care services at 100%
- Require higher copay for brand name/compounded prescription drugs at a plan pharmacy and through the mail order program

This plan will have an out-of-pocket maximum for medical expenses of \$1,500 for an individual and \$3,000 for a family.

ily. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges (member must track out-of-pocket expenses).

For non-Medicare retirees and survivors

➤ **The UnitedHealthcare (UHC) Premier and CIGNA Premier Preferred Provider Organization (PPO) Plans will**

- Allow access to a nationwide network of providers as well as provide an out-of-network benefit with no referrals required (in New Mexico, the network consists of the Presbyterian health system for UHC and the Lovelace Sandia Health Systems for CIGNA)
- Have in- and out-of-network deductibles (e.g., \$250 for an individual and \$750 for a family in-network)
- Provide certain preventive care in-network at 100%, before the deductible
- Require co-insurance (15% in-network and 30% or 50% out-of-network) for most services
- Provide access to primary care physicians for a \$15 copay and specialists for a \$25 copay (certain services provided in the physician office will fall to the coinsurance)
- Require higher minimum and/or maximum retail network prescription drug and mail order copays

These plans will have an in-network out-of-pocket maximum for medical expenses of \$1,750 for an individual and \$3,500 for a family in-network. Therefore, once you meet the applicable out-of-pocket maximum, the Plan(s) will pick up 100 percent of charges in-network. Note: Prescription drugs are not included in this.

Open Enrollment Oct. 26 through Nov. 16

For non-represented, MTC-represented, and OPEIU-represented employees as well as all retirees and survivors.

mum for medical expenses of \$1,750 for an individual and \$3,500 for a family in-network. Therefore, once you meet the applicable out-of-pocket maximum, the Plan(s) will pick up 100 percent of charges in-network. Note: Prescription drugs are not included in this.

➤ **The UHC High Deductible Health Plan will**

- Allow access to a nationwide network of providers as well as provide an out-of-network benefit with no referrals required (in New Mexico, the network consists of the Presbyterian health system)
- Allow participants to open up a Health Savings Account

Albuquerque (Mountain Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
October 27 (Thursday)	Steve Schiff Auditorium, Bldg. 825	8:30 a.m. – 9:30 a.m.	
October 27 (Thursday)	Area IV, Bldg. 962	2:00 p.m. – 3:00 p.m.	
November 2 (Wednesday)	Area IV, Bldg. 962	9:00 a.m. – 10:00 a.m.	
November 2 (Wednesday)	CNSAC, Bldg. 810	2:00 p.m. – 3:00 p.m.	
November 7 (Monday)	Steve Schiff Auditorium, Bldg. 825	9:00 a.m. – 10:00 a.m.	
November 7 (Monday)	Steve Schiff Auditorium, Bldg. 825	2:00 p.m. – 3:00 p.m.	
November 8 (Tuesday)	Steve Schiff Auditorium, Bldg. 825	2:00 p.m. – 3:00 p.m.	
Reimbursement Spending Accounts			
October 27 (Thursday)	Steve Schiff Auditorium, Bldg. 825	9:45 a.m. – 10:45 a.m.	
November 2 (Wednesday)	CNSAC Auditorium (Video)	3:15 p.m. – 4:15 p.m.	

Albuquerque Benefits Fairs			
Benefits Choices 2006			
October 27 (Thursday)	Steve Schiff Auditorium, Bldg. 825	9:00 a.m. – 12:00 p.m.	
November 7 (Monday)	Steve Schiff Auditorium, Bldg. 825	10:00 a.m. – 4:00 p.m.	
November 8 (Tuesday)	Sandia Labs Federal Credit Union	9:00 a.m. – 12:00 p.m.	
November 8 (Tuesday)	Research Park, 1301 Britt St. SE		
November 8 (Tuesday)	Steve Schiff Auditorium, Bldg. 825	1:30 p.m. – 4:00 p.m.	

Livermore (Pacific Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
November 1 (Tuesday)	Doubletree Club Hotel/Livermore	4:00 p.m. – 5:00 p.m.	
Spouses Welcome	720 Las Flores Rd.		
November 1 (Tuesday)	Bldg. 904 (CRF) Auditorium	10:00 a.m. – 11:30 a.m.	
November 10 (Thursday)	Bldg. 940 (MANTL) Auditorium	9:00 a.m. – 10:30 a.m.	
November 14 (Monday)	Bldg. 915/W133	10:00 a.m. – 11:30 a.m.	
Reimbursement Spending Accounts			
November 1 (Tuesday)	Doubletree Club Hotel/Livermore	5:00 p.m. – 6:00 p.m.	
Spouses Welcome	720 Las Flores Rd.		
November 1 (Tuesday)	Bldg. 904 (CRF) Auditorium	9:00 a.m. – 10:00 a.m.	
November 10 (Thursday)	Bldg. 940 (MANTL) Auditorium	10:30 a.m. – 11:30 a.m.	
November 14 (Monday)	Bldg. 915/W133	9:00 a.m. – 10:00 a.m.	

Carlsbad – Via Video Link (Mountain Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
October 27 (Thursday)	NPHA 201-A	8:30 a.m. – 9:30 a.m.	
Reimbursement Spending Accounts			
October 27 (Thursday)	NPHA 201-A	9:45 a.m. – 10:45 a.m.	

Amarillo – Via Video Link (Central Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
October 27 (Thursday)	Trilab Video Conference Room at Pantex	9:30 a.m. – 10:30 a.m.	
Reimbursement Spending Accounts			
October 27 (Thursday)	Trilab Video Conference Room at Pantex	10:45 a.m. – 11:45 a.m.	

Washington, DC – Via Video Link (Eastern Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
October 27 (Thursday)	Sandia Washington Office/Rm. 1001	10:30 a.m. – 11:30 a.m.	
Reimbursement Spending Accounts			
October 27 (Thursday)	Sandia Washington Office/Rm. 1001	11:45 a.m. – 12:45 p.m.	

Nevada (Pacific Time)			
Benefits Choices 2006 (Summary of health care, RSA, VGA, and Vacation Buy)			
November 3 (Thursday)	Nevada Support Facility (NSF) Great Basin Conference Room, A106 N. Las Vegas, NV	3:00 p.m. – 4:30 p.m.	
Reimbursement Spending Accounts			
November 3 (Thursday)	Nevada Support Facility (NSF) Great Basin Conference Room, A106 N. Las Vegas, NV	4:30 p.m. – 5:30 p.m.	

- (see Open Enrollment booklet for more details)
- Have in- and out-of-network deductibles (e.g., \$1,200 for an individual and \$2,400 aggregate deductible for a family in-network)
 - Provide certain preventive care in-network at 100%, before the deductible
 - Require co-insurance (20% in-network and 30% or 50% out-of-network) for ALL services, including prescription drugs. No reimbursement for medical or behavioral health services or prescription drugs can be made until deductible is met

This Plan will have an in-network out-of-pocket maximum for all expenses of \$2,500 for an individual and \$5,000 for a family in-network. Therefore, once you meet the applicable out-of-pocket maximum, the Plan(s) will pick up 100 percent of charges in-network.

➤ **The CIGNA In-Network Plan will**

- Allow access to a nationwide network of providers (in New Mexico, the network consists of the Lovelace Sandia Health Systems)
- Not require a gatekeeper primary care physician or referrals to specialists
- Provide certain preventive care in-network at 100%
- Require higher copayments for certain services
- Provide access to primary care physicians for a \$15 copay and specialists for a \$25 copay
- Require higher retail pharmacy prescription drug and mail order copays

This plan will have an out-of-pocket maximum for medical and prescription drug expenses of \$1,500 for an individual and \$3,000 for a family. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges.

➤ **The Kaiser HMO Plan in California will**

- Require higher copayments for office visits and certain services
- Provide some preventive care services at 100%
- Require higher copay for brand name/compounded prescription drugs at a plan pharmacy and through the mail order program

This plan will have an out-of-pocket maximum for medical expenses of \$1,500 for an individual and \$3,000 for a family. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges (member must track out-of-pocket expenses).

Benefits Meeting Schedules – Retirees			
Albuquerque (Mountain Time)			
Benefits Choices 2006 – Non-Medicare (Summary of health care plan information)			
October 25 (Tuesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	8:30 a.m. – 10:00 a.m.	
October 26 (Wednesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	12:30 p.m. – 2:00 p.m.	
October 31 (Monday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	12:30 p.m. – 2:00 p.m.	
November 1 (Tuesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	8:30 a.m. – 10:00 a.m.	
Benefits Choices 2006 – Medicare-Primary (Summary of health care plan information)			
October 25 (Tuesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	10:30 a.m. – 12:30 p.m.	
October 26 (Wednesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	2:30 p.m. – 4:30 p.m.	
October 31 (Monday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	2:30 p.m. – 4:30 p.m.	
November 1 (Tuesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Embassy Room	10:30 a.m. – 12:30 p.m.	
November 3 (Thursday)	Mountain View Club KAFB, 9310 Club Rd., Bldg. 22000	9:00 a.m. – 11:00 a.m.	

Livermore (Pacific Time)			
Benefits Choices 2006 –Non- Medicare (Summary of health care plan information)			
November 2 (Wednesday)	Doubletree Club Hotel/Livermore 720 Las Flores Road	9:00 a.m. – 10:00 a.m.	
Benefits Choices 2006 – Medicare-Primary (Summary of health care plan information)			
November 2 (Wednesday)	Doubletree Club Hotel/Livermore 720 Las Flores Road	10:00 a.m. – 11:30 a.m.	

Nevada (Pacific Time)			
Benefits Choices 2006 –Non-Medicare and Medicare (Summary of health care plan information)			
November 3 (Thursday)	Nevada Support Facility (NSF) Great Basin Conference Room, A106 N. Las Vegas, NV	1:00 p.m. – 3:00 p.m.	

resources

HBE Customer Service: 505-844-HBES (4237)
e-mail: hbe@sandia.gov
CA Benefits 925-294-2254

Open Enrollment Webs

Sandia Internal Open Enrollment Web (SRN/internal)
http://www.irn.sandia.gov/hr/benefits/events/oe/
Sandia Open Network Open Enrollment Web (SON/external)
http://www.sandia.gov/employment/total-rewards/benefits/oe.html

New — Medical Plan Selection Tool

A new medical plan selection tool will be available during open enrollment to help employees and non-medicare retirees select the medical plan best suited to their particular needs. The tool is designed to aid in estimating overall coverage costs of different plans, including monthly premium share costs. Decision-making items and questions that need to be considered when choosing the appropriate medical plan will be listed. Frequently asked ques-

tions such as “Are my physicians in the network or will I have to change physicians?” or “I have dependents that live away from my home, what kind of coverage will they have?” are examples of some of the questions that can be answered within this consumer web application.

Open Enrollment and Benefits Plan Booklets

The annual Open Enrollment period for Benefits Choices 2006 will be held from Oct. 26 through Nov. 16, 2005, for non-represented, MTC-represented, and OPEIU-represented employees as well as all retirees and survivors. Look for the Benefits Open Enrollment booklets to arrive the last week of October. All employees and retirees will also receive Medical Plan Comparison Grids. There are several important benefit changes. Please review the booklets thoroughly to make the appropriate selections for you and your family. Benefits Plan Booklets are available on the Open Enrollment websites in a printable, Adobe pdf format. If you do not receive a booklet, please contact HBE Customer Service 505-845-HBES (4237) or e-mail hbe@sandia.gov.

For Medicare retirees and survivors

➤ **The UnitedHealthcare (UHC) Premier and CIGNA Premier Preferred Provider Organization (PPO) Plans will**

- Allow access to a nationwide network of providers as well as provide an out-of-network benefit with no referrals required (in New Mexico, the network consists of the Presbyterian health system for UHC and the Lovelace Sandia Health Systems for CIGNA)
- Require a higher out-of-pocket maximum for medical services (e.g., instead of \$250 per person, it will be \$1,000 per person). Once you meet the out-of-pocket maximum, the Plan will coordinate with Medicare.
- The out-of-pocket maximum will still cross apply between in- and out-of-network
- Provide certain preventive care in-network at 100%
- Require co-insurance instead of copays (e.g., most in- and out-of-network services will require a 20% coinsurance until the out-of-pocket maximum is met)
- Require higher minimum and/or maximum retail network prescription drug and mail order copays

➤ **The Lovelace Senior Plan, Presbyterian MediCare PPO**

Plan, and the Kaiser Senior Advantage Plan are Medicare Health Plans that provide certain preventative care in-network at 100%, access to unlimited prescription drug coverage, and copays for most medical services

Presbyterian MediCare PPO (NM)

- No annual deductible
- No gatekeeper (PCP) required
- Referrals not required
- Must assign Medicare Part A and B to the plan
- In and out-of-network benefit

Lovelace Senior Plan (NM)

- No annual deductible
- No gatekeeper (PCP) required
- Referrals not required
- Must assign Medicare Part A and B to the plan
- In-network benefit only

Kaiser Senior Advantage Plan (CA)

- Higher copayment for chiropractic office visits
- No annual deductible
- Self-referral to selected specialties
- Must assign Medicare Part A and B to the plan
- In-network benefit only

This plan will have an out-of-pocket maximum for medical expenses of \$1,500 for an individual and \$3,000 for a family. Therefore, once you meet the applicable out-of-pocket maximum, the Plan will pick up 100 percent of charges (member must track out-of-pocket expenses).

Important Information on New Prescription Drug Benefit from Medicare for Medicare Participants:

On Dec. 8, 2003, President Bush signed the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 into law. The primary focus of this legislation was to provide prescription drug benefits under Medicare Part D for Medicare beneficiaries effective Jan. 1, 2006. Sandia is pleased to announce that if you, as a Medicare participant, enroll in one of the medical plans offered through Sandia in 2006 you will NOT be required to enroll in Medicare Part D or pay the additional Medicare Part D premium.

➤ If you enroll in either the UHC or CIGNA Senior Premier PPO Plan, you will NOT be required to enroll in Medicare Part D for your prescription drug coverage; THEREFORE NO ACTION WILL BE REQUIRED ON YOUR PART WITH RESPECT TO ENROLLING IN MEDICARE PART D. You will receive the same drug coverage and pay the applicable amounts as employees and non-Medicare retirees, survivors, and long-term disability termines.

➤ If you enroll in the Presbyterian Medicare PPO Plan, the Lovelace Senior Plan or Kaiser Permanente Senior Advantage Plan, you will automatically be enrolled in the new Medicare Part D prescription drug benefit (an enhanced benefit through the applicable plan) and will receive all of your prescription drugs through the plan you selected. You will NOT be required to enroll in Medicare Part D or pay the additional Medicare Part D premium; THEREFORE NO ACTION WILL BE REQUIRED ON YOUR PART WITH RESPECT TO ENROLLING IN MEDICARE PART D.

Look for a letter to be mailed to home addresses of retirees, survivors, and Long Term Disability Termines later this month. It will provide more information on the prescription drug coverage under the new Medicare Part D benefit and Sandia's medical plans.

employee meetings

retiree meetings

Exercise missile ‘accident’ shows nuclear readiness by Sandians

Unexpected glitches overcome in six-day, multi-agency ‘Dingo King’ exercise at Navy submarine base

By Neal Singer

An explosion on a Navy loading dock destroyed one Tomahawk missile and dropped a second into 15 feet of water, where it lay buried in mud. Was the water contaminated by radioactive materials? Were air or land contaminated by the plume from the explosion, caused moments earlier by the crash of a small private plane into the dock?

Those questions formed the basis for the elaborate six-day scenario — only partly simulated — that drew 20 Sandians and a number of government agencies to the Navy’s Kings Bay submarine base at the southern end of Georgia for an exercise called Dingo King ’05 from Aug. 22-26.

Real — except for the explosion

The exercise was real except for the initial dock explosion that precipitated the problem. Also, nuclear warheads had been removed from the Tomahawks.

Participants worked 12-hour shifts — some in cumbersome personal protective equipment — in intermittent rainstorms, air thick as soup (daily humidity: 90+ percent), heat in the 90+ degree range, and Hurricane Katrina on the horizon still deciding whether to proceed up the Atlantic coast or enter the Gulf. The melded teams found, raised, dismantled, and prepared the “disarmed” missile for transport to a safe haven.

The exercise revealed the strengths and weaknesses — both bureaucratic and naturally occurring — of the massive attempt at coordinating numerous government agencies to achieve a common task. Most participants at a so-called “hot wash” after the exercise pronounced the exercise an overwhelming success, despite real-world glitches that had to be overcome.

For example, a crucial team called the Accident Response Group (ARG), populated by Sandia (for this exercise, six full-time and 14 volunteer employees), Los Alamos, and Lawrence Livermore national laboratories, and Pantex participants arrived a day late on the scene because a charter plane provided by Ross Aviation — the company contracted to fly the team to an airport in northern Florida — developed real-world problems and could not take off. The team was ferried across the country the next morning by a different carrier.

The delay in arrival of the 70-member main technical group not only slowed work on recovering and safing the weapon but created unease in media simulated at the exercise site. Reporters were frustrated at being unable to get their more technical questions answered by Navy divers or high-ranking Navy players. (Unexpectedly, the most penetrating questioner among the simulated media was Rear Admiral Annette Brown, Commander of Navy Region Southeast, who for 10 minutes played the part of a local reporter.)

On the positive side, the exercise showed that talented people with different protocols could work together. “We felt very welcomed by our Navy hosts,” said DOE site leader Debbie Monette, assistant NNSA manager for national security. That feeling was corroborated by every Sandian that the *Lab News* interviewed.

One reason for the ready integration, said Tom Laiche, health physicist and manager of Hazardous Waste Management & Lab Services (10334), was that “The EOD [explosive ordnance disposal] military guys were anxious to have the engineers there to explain to them what was happening technically.”

Focused on ‘what goes boom’

The EOD folk, he said, are focused on “what goes boom and how to keep that from blowing up. They know rocket motors, propellants, explosives. They’re not necessarily conversant with the heavy metals, neutron generators, and other specialty inclusions. The radioactive portion may be a little unfamiliar to them.

“Meanwhile, the Labs engineers know what makes it work but they’re not the experts in handling explosive materials.”

ARG needs you

ARG is not a phrase out of the recent “Speak Like a Pirate Day” (Sept. 19). Nor is it a cousin of the closely knit BORG of *Star Trek*.

The Accident Response Group handles the most serious nuclear situations in any part of the world on short notice, without losing its cool in the face of problems. If it must move back one step, it advances two. And it needs volunteers.

ARG’s mission, according to a DOE hand-out, is to “develop and maintain readiness to efficiently manage the resolution of accidents or significant incidents involving nuclear weapons that are in DOE’s custody at the time the accident occurred. The ARG will also provide timely worldwide support to [DoD] involving accidents and significant incidents involving nuclear weapons in DoD’s custody.” Using highly specialized equipment, the ARG is expected to monitor, assess, or remove nuclear weapons, components, or debris.

Do you have the skills to help? Contact Ralph Carr of Emergency Response Systems Engineering (12345) for further information.

Recovery procedures necessarily contrasted with popular movies showing superheroes quickly recovering buried treasure as soon as they find it. . . . This was not, after all, pieces-of-eight but (in exercise terms) an extremely dangerous device.

Recovery procedures necessarily contrasted with popular movies showing superheroes quickly recovering buried treasure as soon as they find it. Navy divers, having located the missile on their third attempt, needed to develop and present a safe retrieval plan and have it approved before proceeding. This was not, after all, pieces-of-eight but (in exercise terms) an extremely dangerous device. The lift plan was written in tents cooled by five-ton air conditioners brought by the ARG, and then transmitted via broadband fiber optic lines laid by the ARG to temporary headquarters three-quarters of a mile away.

Pressurized water was pumped by a hose through the Bay water to blow off enough mud to insert a strap under one end of the missile and lift it slightly. More high-pressure water cleared off more mud, another strap was inserted and the missile raised higher, steadily overcoming the resistance of the vacuum created in the muck as the weapon lifted.

Connecting real world to ‘hot zone’

Because the potential for radiological disaster was huge, the ARG team brought monitoring equipment and the expertise of nuclear designers who knew exactly how the weapons functioned.

Four on-foot Sandians deployed 3,100 feet of fiber optic cable to link four video cameras in the “hot zone” proscribed to most participants to the command-and-control center.

“It’s a means of connecting the real world to the hot zone,” said ARG member Dave Tenario (12345), who said that fiber was preferred over copper or radio broadcast because there was far less chance of detonating the high explosives.

The portable integrated video system — a key piece of the equipment that Sandia developed — went dark when a vehicle drove over a cable. But the ARG quickly located the problem and got back on line.

“These are all real-world problems,” said first-time participant Brad Mickelsen, manager of Nuclear Safety Assessment (12332), “and we overcame them.”

Speed, he said, was less of an issue than mov-

ing without making critical mistakes.

“I think the ARG shined, from a tech expertise perspective. We’re well-respected in the accident community. Our role is significant. From a larger perspective [we field] 75 to 100 people who know their jobs well, not counting people back home supporting us.”

Sandia maintains most ARG gear

Sandia, under the leadership of John Hoffman of Emergency Response System Engineering (12345), maintains the bulk of ARG equipment for all users year round, and is responsible for seeing it gets to emergency sites in a timely manner to help the multi-agency ARG.

Why wouldn’t the Navy divers try to locate the missile — known to have fallen close by the dock — by merely poking in the mud with a stick? “If I poke it, I have to worry about it,” Brad said. “I don’t know how much I’ve sensitized [the high explosives in the weapon].” He said the divers probably used magnetometers to locate the shell of the missile.

Interdepartmental problems occurred when a control line set up by Pantex employees, beyond which authorized plans were needed, ran afoul of Marines attempting to relieve their buddies at a shift change in the designated hot zone area. As the Base nuclear commander later put it, “The Marines did what Marines do,” and cleared the area. For an hour and a half, they would let no participant in. The problem was solved via DoD and DOE discussions and rapid communication to the front lines.

Other failures in communication were noted, as when already-used and thus potentially frayed straps were employed instead of fresh ones to lift the heavy missile out of the mud and lay it on the dock.

Exercise just a step ahead of Katrina

Still, overall coordination was rated by many participants as “exceptionally good.” Members of the ARG were rapidly accepted and integrated with their DoD opposite numbers. Members of the two huge departments, along with participants from FEMA, the FBI, the Defense Threat Reduction Agency, Environmental Protection Agency, National Transportation Safety Board, the National Nuclear Security Administration, and others cooperated to develop plans, lay out work areas, transmit information, and remove, disassemble, and package dangerous objects.

Mission accomplished, the ARG lifted off in a charter plane nonstop to Albuquerque on Saturday, six days after activation. The lift-off on Saturday afternoon was a step ahead of Hurricane Katrina, which had by then veered toward New Orleans.

Visible in the distance and as high as the plane, the hurricane loomed over the normal cloud layer below like the Sandias over Albuquerque. The next morning, it would strike New Orleans, finding terrible gaps in its preparations, despite the city’s FEMA exercises.

To the natural question of how effective the DOE/DoD exercises would be in the event of a real emergency, Tom Laiche responds, “From a purely weapons recovery standpoint, the national labs and the military, teaming together, have exercised together enough that we can recover about any kind of weapon in any kind of configuration.”

The problem he foresees, however, is showing “an immediate and positive reaction to public issues that will be generated.” By this, he doesn’t mean a media presence so much as “immediate government assistance, and people out there doing things.” From a health physicist’s point of view, he says, “I could tell them to go to sleep and don’t worry about it. But from their point of view, their dog will have died, children break out in hives [and they’ll attribute it all to the accident] — it’ll be another Three-Mile Island. If we have a release of radioactivity from a true weapons accident, it will take us a long time politically to recover.”

Retiree Jim Schulze goes to head of the class with CroSSLinks

By Iris Aboytes

Jim Schulze retired from Sandia in 1996 to pursue what he calls “other ventures.” He meandered across the country and finally settled in Elephant Butte. He was referred to a teacher in the Deming school system, who thought his science background might be a boon to the elementary school kids there.

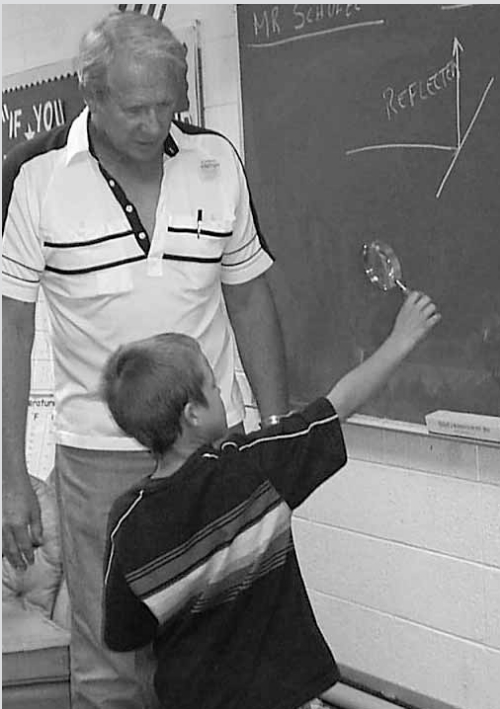
“I thought this might be a fun project,” says Jim, “especially teaching the disadvantaged and the enriched kids. Little did I know it would be so personally rewarding.”

Jim has been involved in teaching math and science to fourth and fifth graders two to three days a week for two years.

“This year, in order to teach more classes, I had to move to a trailer park in Deming for four days a week. I now teach Monday through Thursday afternoons.”

“Sandia’s Community Involvement [Dept. 3652] has been very generous in supplying teaching aids oriented toward this age group of children,” says Jim. He participates in Sandia’s CroSSLinks program, which links the science and school communities in an effort to improve science education. Volunteers partner with teachers to advance the teaching of hands-on science in support of standards and curriculum.

“There are currently about 60 active



A GOOD REFLECTION — Retiree Jim Schulze reflects well on Sandia with his commitment to education outreach.



JIM brings Labs education outreach to Deming classrooms four days a week.

CroSSLinks volunteers,” says Amy Tapia (3652). “We are always recruiting more. The program focuses on K-5, and we can provide volunteers with standards-based kits including lesson plans and materials.”

Jim often wondered if he was getting through to students until one day. “I was teaching optics to a group of fourth graders,” says Jim. “As I explained how a lens works, I noticed a student looking totally perplexed. I wondered if I was totally losing him. My thought was if I had lost him, had I lost all the others as well?”

Weeks later Jim was present when the teacher was showing pictures of the class Jim taught. The photo showed him discussing lenses. All of a sudden, the student who Jim thought he had lost spoke up. “I know exactly how that works,” said the excited student. He then proceeded to explain to the class in complete detail. He described exactly what, why, and how the lens worked almost word for word from that class.

“I was shocked,” says Jim. “I was at a loss for words. “I will never forget that. It is the reason I keep doing this. I do not get paid financially, but payment in the form of satisfaction will always replace money.”

For more information or if you would like to volunteer for CroSSLinks, contact Amy Tapia at astapia@sandia.gov or at 284-5207.

Manager Promotions

California

Barry Hess from Manager, Cyber Security Initiatives Dept. 8156, to Senior Manager and Deputy Chief Information Officer for Information Systems in Center 4600.

Barry joined Sandia in 1981. He designed real-time image processing techniques, used in projects with United Technologies and Bethlehem Steel.

In 1993 he began full-time research on distributed system software, eventually copyrighting software that was licensed to industrial partners.

He was Manager of Security and Network Research from 1999 to 2001, where he managed Sandia/California cyber security operations, information security research, cyber security education, intrusion detection research, and advanced network research.

He helped build and manage the Center for Cyber Defenders, where more than 100 interns have been trained.

He began managing the Information Security Department in 2001, and until 2004 served as Deputy Corporate Cyber Security Program Manager and co-managed Sandia’s corporate cyber security program.

He then moved to the Homeland Security Strategic Management Unit where he served as the Homeland Security SMU Program Deputy supporting the DHS Information Analysis and Infrastructure Protection Directorate.

In his new role he serves as Sandia’s Chief Information Architect and Deputy Chief Information Officer for Information Systems, as well as becoming a member of the Operational Planning and Analysis Group.

Barry holds degrees in electronics engineering and computer engineering from Nashville Tech.



BARRY HESS

New Mexico

Steve Rohde from Team Leader, Micro-Product Engineering Dept. 1712, to Manager, Embedded Subsystems Dept. 5337.

Steve joined Sandia in 1988. Before that, he was an autopilot systems engineer for Sperry Flight Systems in Phoenix and Albuquerque before becoming a civilian engineer for the US Navy at China Lake, Calif. Steve finished his time at China Lake as a branch manager for conventional weapon fuzing.

He came to Sandia to do conventional fuzing and has since worked in several 5900 departments on the Vulnerability Assessment Program and most recently as a microsystems integrator in Dept. 1712, working most notably on the 2004 Employee Recognition Award-winning Micro-Hound with Dept. 6418, formerly part of 4100 and 5800.

Steve has three joint patent applications in the mill on Ion Mobility Spectrometer (IMS) construction, novel IMS signal processing, and Earth location based on planetary motion (GeoLocation).

He has a BSEE from South Dakota School of Mines in Rapid City and an MSEE from California State University in Northridge.

Darren Talley from SMTS, Nuclear Reactor Facilities Dept. 1381, to Manager of that same department

Darren joined Sandia in 1989 as a nuclear engineer in the Radiation Effects and Reactor Design Department where he worked on safety analysis for the Annular Core Research Reactor (ACRR) and the Sandia Pulsed Reactor (SPR).



STEVE ROHDE



DARREN TALLEY

He then worked on programs such as Space Nuclear Thermal Propulsion and medical isotope production as an experimentalist fielding in-reactor experiments at the ACRR and the SPR, as well as post-irradiation processing of experiments in the Hot Cell Facility.

Darren left Sandia in 1998 to work at Arkansas Nuclear One, a nuclear power plant, as a safety analysis engineer. He returned to Sandia in 2002 to the Nuclear Reactor Facilities Department supporting reactor operations as a nuclear engineer.


Darren has a BS in mechanical engineering from the University of Arkansas and an MS in nuclear engineering from the University of Michigan.

Phil Newman, new Director of ES&H and Emergency Management Center 10300.

Phil is an experienced ES&H executive, having held jobs as Global Manager of Industrial Hygiene at GE Advanced Materials, and Sector and Central Region Manager of Environmental, Safety, Health and Medical at Northrop Grumman Corporation. He was also Manager of Safety, Health, and Medical Services, Military Aircraft Systems Division of Northrop Grumman.

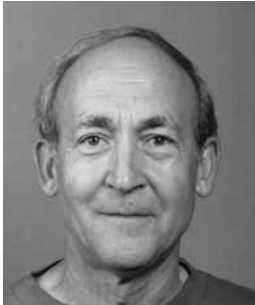
Phil is a Certified Industrial Hygienist and a Registered Environmental Health Specialist in California. He holds an MS in Occupational and Environmental Health Science and a BS in Environmental Health Science, both from California State University-Northridge. Phil is a member of the American Industrial Hygiene Association, American Board of Industrial Hygiene, the North Texas Section of the American Industrial Hygiene Association, and the National Safety Council.

Phil will report to Sandia on Oct. 24.

Schedule for Sandia's 2005 ECP/United Way Campaign kickoff event: Books are Fun Book Fair			
	Tuesday, Oct. 18 10 a.m.-2 p.m. Thunderbird Café	Wednesday, Oct. 19 10 a.m.-2 p.m. Thunderbird Café	Thursday Oct. 20 10 a.m.-2 p.m. Thunderbird Café
Monday, Oct 24 11 a.m.-4 p.m. Bldg. 811 Rms. 218/220	Tuesday, Oct. 25 9 a.m.-4 p.m. Bldg. 811 Rms. 218/220	Wednesday, Oct. 26 9 a.m.-4 p.m. Bldg. 811 Rms. 218/220	Thursday, Oct. 27 9 a.m.-4 p.m. Bldg. 811 Rms. 218/220

Mileposts

New Mexico photos by Michelle Fleming
California photos by Bud Pellitier

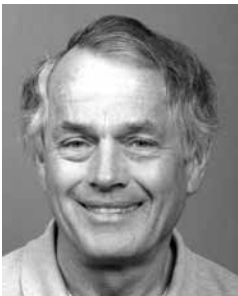


Phillip Walkington
40 6252



John Cummings
30 7000

Recent Retirees



Donald Schroeder
40 4600



Gary Gallegos
30 2433



William Vonderheide
30 5997



Nora Armijo
25 10222



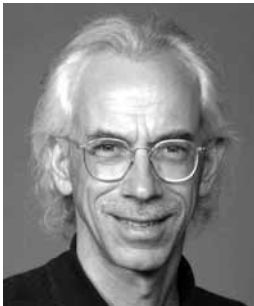
Leonard Connell
25 245



Pete Witze
39 8362



Lloyd Bonzon
37 2554



Stewart Griffiths
25 8700



Jerry McDowell
25 5000



Yvonne Vallejos
25 10038



Todd Criel
20 5425



Fred Boston
30 2433



Robert Kaneshiro
30 10265



G. Gordon Graham
20 10246



Tony Kill
20 5342



Rebecca March
20 10037



Brent Meyer
20 1731



Michael Sharp
29 5532



Barry Bronkema
21 1525



Christopher Rautman
20 6113



William Sweatt
20 1713



Patricia Thomas
20 5425



Regina Valenzuela
20 6039



Marion Hunter
16 8762



Patricia Keane
10 6211



Andrea Cassidy
20 4537



D. Craig Wilcox
20 5339



Cynthia Blain
15 5339



J. Joseph Clement
15 5624



Anne Cosbey
15 4342



Gertrude Gutierrez
15 10501



Steve Neely
15 8221



Curtis Nelson
15 1524



A. L. Cindy Olson
15 12900



Rita Simon
15 4300



Stuart Smith
15 2553



Jeffrey Whitlow
15 233

United Way’s Corporate Cornerstone program allows your dollars to go 100 percent to programs

By Iris Aboytes

Corporate Cornerstone members are companies, like Lockheed Martin, that choose to direct their corporate gifts to pay United Way’s administrative expenses. Lockheed Martin is a \$50,000 contributor. This program enables 100 percent of the money donated by Sandians through ECP program to go to the people least able to help themselves in central New Mexico.

Established in 1998, the program is a corporate recognition program. Because of its extensive

ECP Campaign Oct. 24-Nov. 11

use of volunteers, United Way’s administrative costs (15 percent) are among the lowest of most major charities and less than most agencies in our community.

Since 2002, Corporate Cornerstone companies have contributed more than the total administrative budget required each year. The additional funds are used to establish systemic improvement programs. These programs include:

The Center for Nonprofit Excellence — A collaborative effort between United Way and the Albuquerque Community Foundation, the center is designed to improve the core capacities of all nonprofit organizations in areas such as technology, board recruitment and training, fundraising, and strategic planning. It will be operational this month. The following programs, which are already in place, will come under the center.

Social Entrepreneurship — An intensive, business-based, 18-month training program that helps nonprofit organizations create new enterprises in line with their mission and which create new streams of revenue to sustain the work of

their organizations.

The Initiative Against Family Violence — With reports of domestic violence escalating, this initiative works to change the culture and eliminate tolerance for family violence. Current efforts are focused on community education and bringing all partners to collaborate on how services can better serve victims.

The New Mexico Health Care Collaborative — This initiative is building a disease management data warehouse focusing on diabetes, pediatric asthma, lower-back pain, and depression. This is particularly helpful to emergency-room physicians and



school nurses who encounter acutely breathless children and often have no baseline or medication information to assess and treat them.

Priority Focus Area Funding — Remaining Corporate Cornerstone funds are added to the dollars allocated to participating organizations through the volunteer review process.

Technology Assistance Fund — This is a way for local nonprofits to apply for matching funds for technology hardware and software. The center anticipates offering technology assistance through the corporate partner companies.

United Way’s Community Fund: Where does the money go?

The dollars raised in the 2005 campaign are currently funding 115 programs in 80 agencies within central New Mexico through the Community Fund. The per-agency allocation average grant is \$60,000. The competitive process is open to any nonprofit organization in central New Mexico serving the most vulnerable.

Who decides where the money goes? Volunteers decide. Each year, more than 200 volunteers provide a rigorous, informed, and onsite review for programs that seek United Way funding. Programs are examined for need, efficiency and effectiveness, and fiscal accountability. This process, unique to United Way, provides quality assurance on behalf of all donors.

Volunteers are placed on community panels and meet to review proposals from the different

agencies and make recommendations. Sandians sit on panels every year.

The Community Fund is backed by a money-back guarantee. This means that if a donor does not like where volunteers decide to send his/her money, the donor can get the donation back. This offer is rare among agencies.

The Community Fund is designed for the common good. Donor gifts collectively offer comprehensive solutions for the most vulnerable people in our community with serious issues affecting their lives.

A gift to the Community Fund is more than a charitable gift. It is a new hope, a new path. It is dignity restored. It is turning dependence into independence. Giving to the Community Fund builds a better community for all of us. Be the link of the chain we call humanity. —Iris Aboytes

Sandia giving: It’s a tradition. Why?

Retiree Merrill Jones is grateful for the opportunity to participate

Why do I give to ECP? There are many reasons. Right now we are especially aware that there are members of our society who are builders, and those who are spoilers. I want to be among the builders.

One way of doing that is to support the Employee Contribution Plan (ECP). The programs it supports help many people to reach their maximum potential and in the process improve our city, state, and country.

I have experienced the constructive work that is enabled by ECP. In the past, my brother benefited from training and counseling programs that were far beyond anything that our family could have done for him.

Many years ago, similar programs — under what was then the Community Chest — sponsored training for two of my very good friends, bringing them into the workforce in constructive roles.

ECP is a misnomer for me since I am no longer a Sandia employee, but a Sandia retiree. Retirees can now request regular monthly ECP deductions from their pension checks. I am grateful and proud that I have the opportunity to be a participant in the Sandia ECP.

Connie Vanderburg (10800) wants a better, more caring community

I have had the honor of being the Center 10800 United Way representative for 10 years. I have a passion for helping people. This role gives me an opportunity to help the community without taking time away from my family.

I love to tell everyone about the deserving United Way agencies in our community since I have toured many of them. I have seen first hand the work they do.

I feel lucky to have a wonderful place to work along with a loving, supportive family. Many in our community don’t have these luxuries. My heart goes out to them.

Since I can’t take care of all of them myself, I try to encourage others to help as well. If I can help just one family, it is worth all the time I spend.

I challenge each Sandian to look deep into his/her heart. Your support is crucial to making Albuquerque a better, stronger, and more caring community.

Jim Felix (1752) considers it a privilege to help others

I learned the importance of giving from the generosity of my parents. They were always helping those in need by volunteering their time and talents. Growing up and seeing them make a difference in the lives of others was awesome.

I give simply because I believe it is important to give back to the community. My achievements in life are due to the sacrifices and hard work of many individuals. I see it as a privilege to help give others the same opportunities I’ve been given.

My busy schedule makes it difficult to donate the amount of time I would like. I make enough money so I am able to give financially and still live a comfortable life and save for my future.

I could find other ways to spend my donation, but I see giving to the United Way through the Sandia ECP as an investment in our community’s future. By donating through ECP, I can be certain that my giving actually goes to those in our community who need it most.



MERRILL



CONNIE



JIM

These Sandians currently serve on United Way panels: Pamela Catanach, Jodi Maheras, John Crawford (ret.), Alicia Anastasio, Julia Archibeque-Guerra, Mark Aspelin, Marlene Brown, Robin Chambers, Victor Chavez, Philip Dreike, Michelle Fromm-Lewis, Mary Gallegos, Russell Goebel, Michael Gomez, Mickey Hogue, Justine Johannes, Joanne Lawry, Nancy Marsh, Sheri Martinez, Mike McClafferty, Debra Menke, and Phil Montoya.

